

## AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

1-11. (Cancelled)

12. (Currently amended) A collection vessel assembly, comprising:

a collection vessel for collecting liquid phase from a chromatographic mobile phase flow stream;

a vessel extender container comprising a hollow cylindrical body with an open top end that receives liquid phase from a mobile phase flow stream and an open bottom end that is sealably attached to the collection vessel, such that the vessel extender container and collection vessel form a single sample collection unit container,

wherein the unit container forms a flow path for the liquid phase to flow through the vessel extender container and into the collection vessel, and

wherein the unit container is sealably attached together to ~~provides~~ provide storage of the liquid phase into the extended vessel container.

13-19 (cancelled)

20. (Original) The collection vessel assembly of claim 12, wherein the vessel extender container has a diameter of the open bottom end of an approximate diameter of the open top end of the collection vessel.

21. (Original) The collection vessel assembly of claim 12, wherein the collection vessel assembly is formed to maintain a footprint of the collection vessel alone such that the assembly can be used in automated laboratory devices that are fitted for a collection vessel throughout a chromatography purification process.

22. (Original) The collection vessel assembly of claim 12, wherein the collection vessel is formed as a straight-walled cylindrical container, and the vessel extender container is formed as a straight-walled cylindrical container.

23-26 (cancelled).

27. (New) A process for sample collection from a flow stream containing a mixture of highly compressed gas, compressible liquid or supercritical fluid and a relatively incompressible liquid, comprising:

separating liquid phase fractions in the flow stream;

providing a collection system connected to the flow stream;

providing an extended vessel assembly, within the collection system, comprising a vessel extender sealably attached to a collection vessel;

sending the liquid phase fractions to the extended vessel assembly wherein the fractions are received into the assembly through the vessel extender;

filling the assembly with the liquid phase fractions beyond a volumetric capacity of the collection vessel; and

providing a volume in the vessel extender for expansion of a gas phase from the liquid phase fraction without forming an aerosol at the surface of the liquid phase.

28. (New) The process of claim 27, wherein the providing the volume for expansion of the gas phase comprises providing the volume for expansion of carbon dioxide out of the liquid phase fraction without forming an aerosol of gas and liquid mixtures at the surface of the liquid phase.

29. (New) The process of claim 27, wherein the separating and the sending the liquid phase fractions comprises separating and sending a volume of liquid phase fractions from a single chromatographic peak from the separation of a volume greater than the volumetric capacity of the collection vessel.

30. (New) The process of claim 27, further comprising:

performing a dry down of the liquid phase fractions in the extended vessel

assembly after the gas phase has expanded out of the liquid phase fractions.

31. (New) A process for collecting a sample from a supercritical fluid chromatography (SFC) system:

providing a flow stream in the SFC system containing a mixture of highly compressed gas, compressible liquid or supercritical fluid and a relatively incompressible liquid;

separating liquid phase fractions from a peak in the flow stream;

directing the separated fractions to a collection system within the SFC system;

providing an extended vessel assembly, within the collection system, comprising a vessel extender sealably attached to a collection vessel;

receiving the liquid phase fractions into the extended vessel assembly wherein the assembly is filled with a volume of the liquid phase fractions beyond a volumetric capacity of the collection vessel; and

expanding a gas phase from the liquid phase fraction within the vessel extender without forming an aerosol at the surface of the liquid phase.

32. (New) The process of claim 31, wherein the providing the volume for expansion of the gas phase comprises providing the volume for expansion of carbon dioxide out of the liquid phase fraction without forming an aerosol of gas and liquid mixtures at the surface of the liquid phase.

33. (New) The process of claim 31, wherein the separating and the sending the liquid phase fractions comprises separating and sending a volume of liquid phase fractions from a single chromatographic peak from the separation of a volume greater than the volumetric capacity of the collection vessel.

34. (New) The process of claim 31, further comprising:

performing a dry down of the liquid phase fractions in the extended vessel assembly after the gas phase has expanded out of the liquid phase fractions.